AMATEURADIO

News of the Amateur Radio and Amateur Satellite Services

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Owen Garriott: The Man Behind the Mission

by Roy Neal, NBC News

When the Space Shuttle *Columbia* lifts off from Cape Canaveral, Florida, on October 28, Amateur Radio will be aboard to make its own mark on history. It is during that nine-day mission, designated STS-9, that NASA Astronaut Owen Garriott will become the first radio amateur to operate from space. Using a specially designed ham radio set and antenna, Dr. Garriott will attempt, at certain times during the flight, to make two-way contacts with Amateur Radio operators worldwide. Recently,NBC Science Editor Roy Neal, also a ham radio operator, had the chance to meet with Dr. Garriott and find out more about the man who will soon usher Amateur Radio into the world of manned space communications.

In Enid, Oklahoma, the main throughfare is "Owen Garriott Street." Enid is as proud of its astronaut as he is of his home town. Garriott feels strongly that Enid gave him the training and inspiration to become what he is today — and Amateur Radio played a prominent role.

During the war years of the 40's, when Owen was in junior high school, his father came home with the news that the Enid Amateur Radio Club was starting a code class. Father and son began taking lessons. A few months

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Aboard the space shuttle trainer at Johnson Space Center in Houston, Astronaut Owen Garriott goes through a trial run with the specially designed equipment he will use when he becomes the first radio amateur to operate from an orbiting spacecraft.

(NASA photo)

Radio Ham to Operate From Space

For the first time ever, "average" citizens from localities all over the U.S. and the rest of the world will have a chance to talk directly with an astronaut in orbit when STS-9 (the Space Shuttle *Columbia*) lifts off from Cape Canaveral October 28 carrying the first Amateur (Ham) Radio station into orbit.

Dr. Owen Garriott, a NASA mission specialist astronaut and Amateur Radio operator, will use a hand-held radio during part of his off-duty time to communicate with some of the thousands of "ham" radio operators around the world. Garriott's call sign is W5LFL.

Original proposals to place an Amateur Radio transceiver aboard an orbiting U.S. spacecraft surfaced when NASA was about to launch "Skylab" in the early 1970s. NASA rejected the plan, then dubbed SKYLARK (for Skylab Amateur Radio Communications) because it came too late in the development of the program.

Space shuttle flights presented another opportunity. The American Radio Relay League (ARRL) and the Radio Amateur Satellite Corporation (AMSAT) jointly requested that NASA supply a small transceiver to be carried by Garriott, a ham operator since his teens.

NASA accepted the proposal with the stipulation that the plan would not interfere with mission activities and that safety requirements were met.

Crew members aboard the Spacelab 1 flight will work on a 12-hour-on, 12-hour-off schedule. Use of the ham radio will be limited to one hour a day.

The radio will be operated from the aft flight deck of the Space Shuttle orbiter *Columbia*, which is carrying the Spacelab in its cargo bay.

All ham radio operation for STS-9 will be in the Amateur Radio 2-meter band (144 to 148 MHz). The primary frequency Dr. Garriott will be using when transmitting over the U.S. is 145.55 MHz. Although only licensed Amateur Radio operators will be allowed to transmit signals, anyone with an interest can listen in. All that will be needed to listen is a reciever (such as a scanner) capable of tuning to 145.55 MHz.

Specially designed QSL cards (post cards used by hams to confirm two-way contact or reception of signals) will be available to anyone who sends a reception report of the Amateur Radio operation from Space Shuttle *Columbia*. Nonamateurs can monitor on scanners to qualify for the special QSL. Send all reception and confirmed contact reports to ARRL, STS-9, 225 Main St., Newington, CT 06111 USA.

Dr. Garriott's transceiver will be a battery-powered unit capable of five watts of output power. The antenna will be placed in the upper crew compartment window on the aft flight deck. Garriott will wear the standard in-flight headset when operating the radio. Most of the earth's land mass will be within line-of-sight transmission of the spacecraft during a typical day. The times when Garriott will communicate with "ham" operators will be announced later.

"Amateur Radio is a valuable national, even international, asset and it is certainly appropriate that Spacelab be used to demonstrate this capability," said Garriott, who will operate Spacelab 1 systems and conduct many of its experiments during the mission. "I look forward with great enthusiasm to brief conversations with as many of my fellow hams around the world as our work schedule will permit."

Astronaut Owen Garriott (left) discusses the Amateur Radio aspects of the STS-9 mission with ARRL President Victor Clark aboard the shuttle trainer at the Johnson Space Center in Houston.

(NASA photo)

ARRL Satellite Program Manager Bernie Glassmeyer, ARRL President Victor Clark, ARRL Public Information Coordinator Peter O'Dell and Radio Amateur Satellite Corporation (AMSAT) Executive Vice President Vern Riportella work out some details of the first Amateur Radio operation from space with Astronaut Owen Garriott.

(NASA photo)

Garriott

Continued from page 1

later, the club offered classes in the theory and practice of radio, and the Garriotts kept right on studying. They went to the Federal Communications Commission (FCC) to take the test for an amateur license, and both of them passed. Owen Garriott, Sr., became W5KWQ; Owen K. Garriott, the future astronaut, got the call W5LFL.

Owen's first station was a "homebrew" two-tube radio. His antenna was a wire strung from a bedroom window to the garage.

By the time Owen graduated from high school, his interest in radio had set him on course for college. He earned a BSEE degree from the University of Oklahoma (1953) and an MSEE degree (1957) and a PhD (1960) from Stanford, where he taught electronics, electromagnetic theory and ionospheric physics as an associate professor. Later, he was presented with an honorary doctorate from Phillips University in Enid. Owen has authored or coauthored more than 30 scientific papers and a book, mostly on ionospheric physics. He remains a consulting professor at Stanford.

As an electronics officer in the U.S. Navy from 1953 to 1956, Owen saw duty at sea on several destroyers. Also, he has logged more than 4300 hours of flying time, including more than 2500 hours in jets.

In June 1965, NASA elected Owen as a scientist-astronaut. As scientist-pilot aboard Skylab 3, he was in orbit from July 28 to September 25, 1973, logging 1427 hours and 9 minutes in space. Owen also spent 13 hours and 43 minutes in three separate spacewalks outside the orbital workshop. He tried to get permission to carry Amateur Radio equipment on that flight, but NASA management turned down the request.

Since then, Owen and fellow scientist-astronaut Robert Parker have been working as mission specialists, preparing for the Spacelab 1 flight aboard the Space Shuttle Orbiter *Columbia*. When NASA decided to allow him to operate his Amateur Radio station on that flight, Owen says it was a dream come true — the achievement of a project that had been on his mind since he first became an astronaut.

In his 53 years, Owen Garriott has received many honors, among them the Collier Trophy, the Goddard Memorial Trophy and the NASA Distinguished Service Medal — special honors awarded to a man who has pioneered the techniques of space. Now, he is about to pioneer Amateur Radio from the flight deck of a spaceship. And one of his proudest possessions is the Amateur Radio License that reads, "Owen Garriott, W5LFL."

WANT TO KNOW MORE ABOUT THE AMATEUR RADIO SERVICE? Contact Perry Williams, ARRL's Washington Area Coordinator, and arrange for a personal visit by calling (202) 296-9107.

ALONG LEAGUE LINES

All summer, the excitement has been building: We're going to have a ham in space! When Astronaut Owen Garriott rides into orbit on the Space Shuttle's STS-9 mission (now scheduled for October 28), he will have on board an amateur hand-held transceiver and an antenna that has been especially designed to fit into one of the Shuttle's windows. During off-duty hours, when it won't disturb other Shuttle activities, Owen has NASA's permission to operate. He will be trying to contact as many earthbound radio amateurs as possible during the few hours thus available.

The "ham in space" concept took more than 11 years to come to fruition. When Dr. Garriott was chosen as a member of the crew for Skylab II, NASA gave serious consideration to an AMSAT proposal, made with ARRL backing, that he bring a rig aloft for the two-month mission. [AMSAT is the Radio Amateur Radio Satellite Corporation, a non-profit organization that promotes Amateur Radio space and satellite communication.] It was reported that the proposal was turned down "with reluctance." The STS-9 proposal, made jointly by AMSAT and ARRL, met a happier fate because of support for the idea that built up within the NASA organization. The first ham in space should not be the last; Astronaut and Amateur Radio operator Tony England, is scheduled for a subsequent Shuttle ride, and there's no telling how many other members of the astronaut corps may be bitten by the ham radio bug!

While hundreds of people have worked to make this operation possible, none has been more diligent or has shown greater vision than another Amateur Radio operator, Roy Neal. Roy has covered the space program for NBC practically since its inception and with this background was able to see, perhaps more clearly than anyone, how the idea of private citizens communicating directly with an astronaut would excite the imagination of the general public. See his article on Dr. Garriott in this issue of *Amateuradio.*

The virtues of Amateur Radio are sometimes seen by the public during some unpredictable calamity involving human suffering, such as fires, floods, tornadoes, hurricans and the like. Astronaut and Amateur Radio operator Owen Garriott will have the greatest opportunity to publicize the positive aspects of the Amateur Radio Service which are not overshadowed by tragedy. The world of Amateur Radio will enter the "Final Frontier" this October. Watch for it!

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